Major Public Concerns Raised by the San Bruno Gas Pipeline Rupture

6/1/11 Presentation to Washington State Citizens Committee on Pipeline Safety

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Based on Information Readily Available and in the Public Domain

Seeing Too Much Spin Concerning San Bruno Failure

- NTSB Urgent Safety Recommendations and PHMSA ADB 11-01 concerning MAOP, Hydrotesting, and Pipeline Records issued in early January 2011
  - Some Gas Transmission industry overreaction should be raising serious flags with the public

- Seeing too many attempts at avoidance or deception trying to dismiss core San Bruno issues
  - Incomplete Testimony at March 2011 Special NTSB Hearing on San Bruno
  - Comments at Feb. 2011 NARUC and March 2011 Pipeline Joint Technical Advisory Committee meetings

- Focus today on several important San Bruno related pipeline matters
  - The San Bruno Ruptured Pipe
  - Pipeline Emergency Response Plans & First Responders
  - Certain Pipeline Information Needed by First Responder or the Public
  - State PUC Effectiveness & Pipeline Safety
    - Observations on Pipeline Safety in Washington State

The San Bruno Failure

San Bruno Police Dept. Photo
(Taken from a nearby street on 9-9-10)

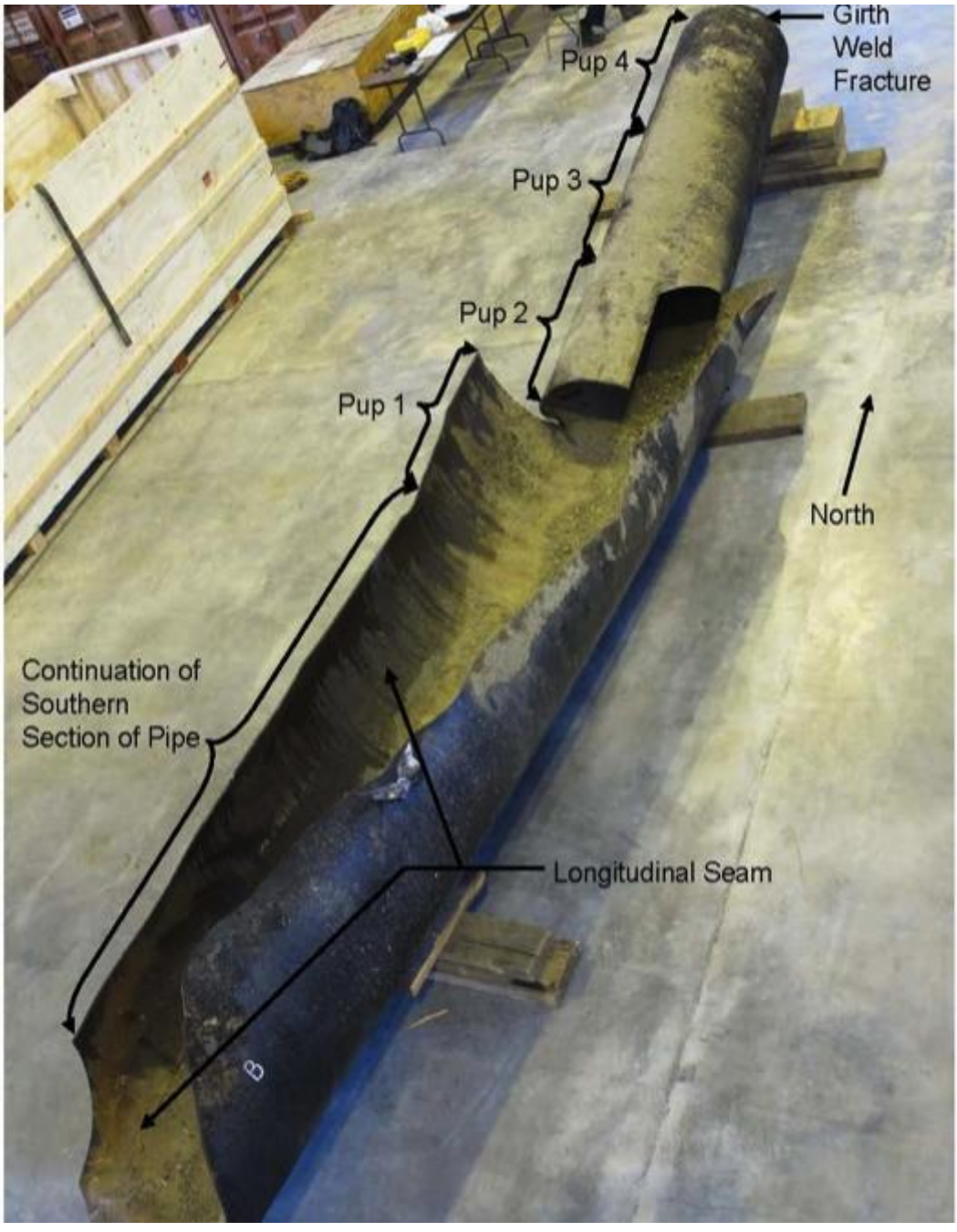
As a First Responder - Just what would you do?

Who is supposed to be in charge/control?
Hint –the Pipeline Operator!!!!

The San Bruno 9/9/10 Event

- Classic Gas Transmission Pipeline Rupture
  - 30-Inch Pipeline – An exotic
    - Does C-fer correlation really fit?
  - A "Low Mass Spectrum" release
    - (~1050 tons of natural gas over 80 minutes)
      - Serious delays in mainline valve closures
    - Ruptures usually (but not always) generate their own ignition/detonation
  - Pipe Failed at below unusually low MAOP of 400 psig
    - Very Bad!
- Raises very important questions about pipeline safety intent and regulatory compliance/adequacy!
- Are certain seam/construction anomalies really "stable" as claimed by some in industry/pipeline safety regulations?
- Serious discrepancies in San Bruno pipeline risk management approach
  - Pipeline records don't reflect what is in field
  - No hydrotest – ever!

San Bruno - The Failed Pipe



Not seamless pipe as assumed by operator in any of the above segments!

From NTSB Metallurgical Report of 1/21/11

San Bruno Rupture Initiation Site

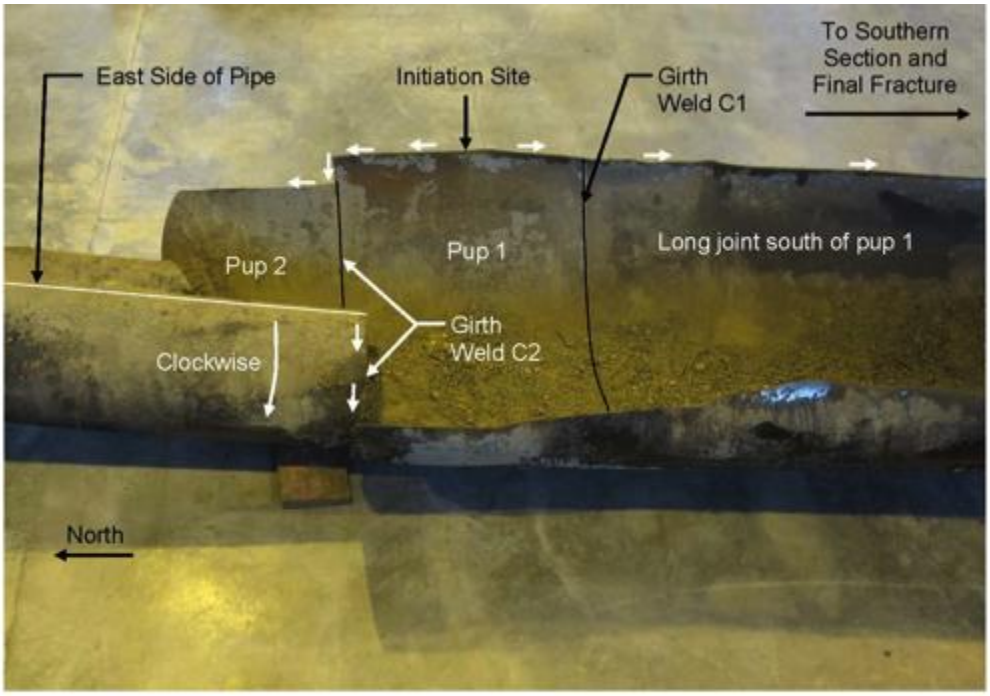
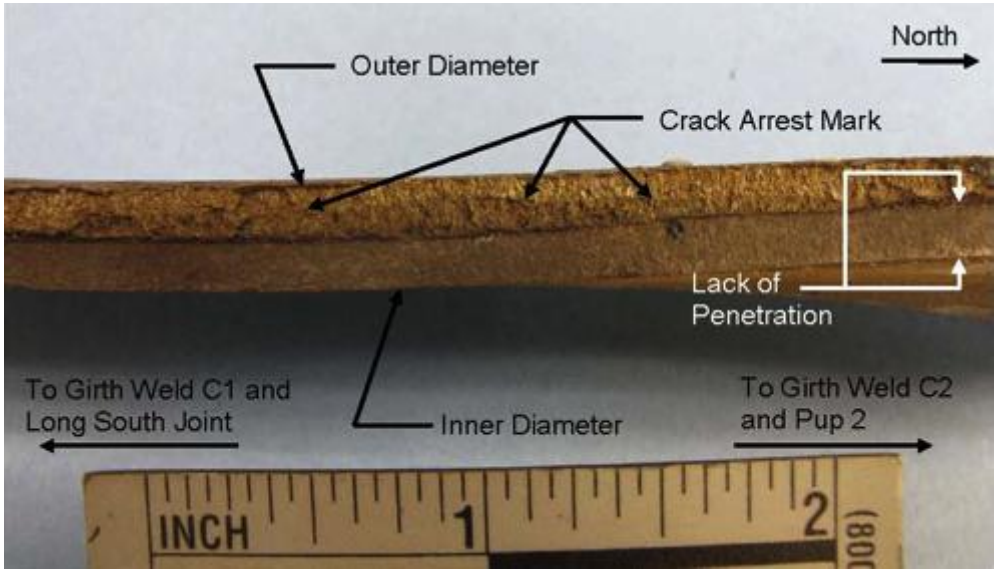


Figure 41: Photograph of center section showing the location of the initiation site in pup 1 and white arrows indicating the direction of crack propagation consistent with the observed fracture features.



cross section view of the longitudinal seam at the initiation site.
Lack of weld penetration about 45% of total pipewall of ~ 3/8 inch

From NTSB Metallurgical Report of 1/21/11

Pup 1 Rupture Initiation Site(reconstituted)

From NTSB Metallurgical Report of 1/21/11

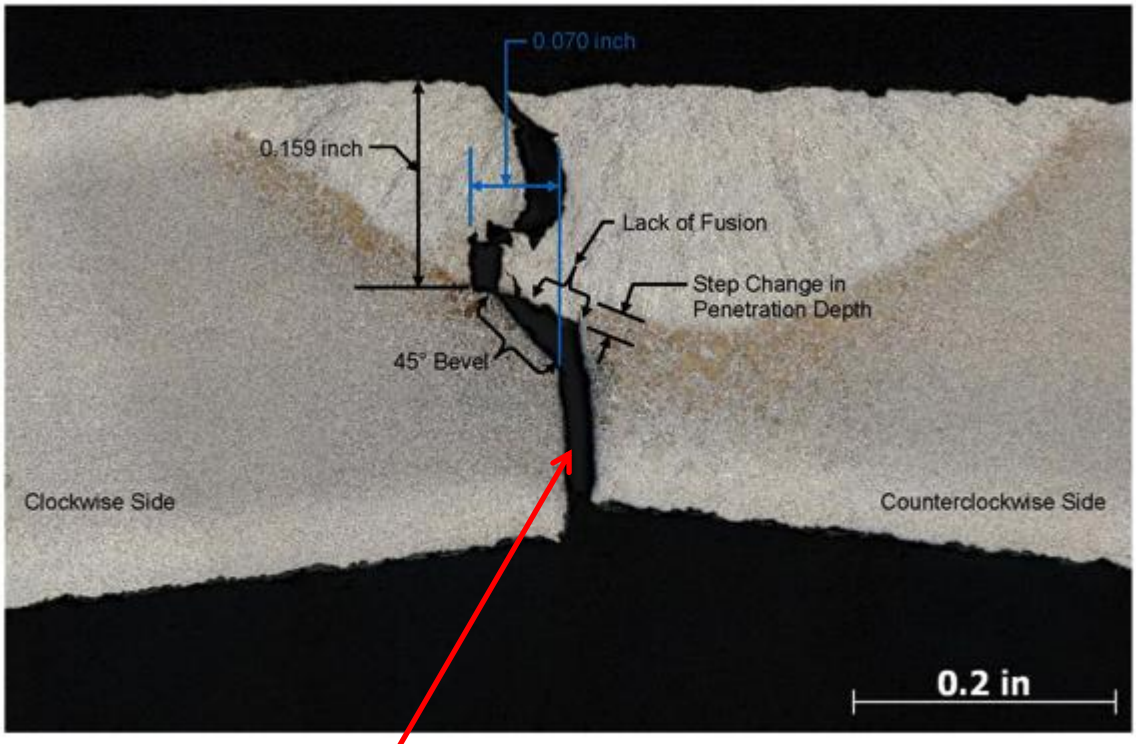


Figure 46: Higher magnification view of the seam in pup 1 (see figure 44) showing the offset from the seam and depth of penetration at the plane of fracture.

Incomplete seam weld (lack of penetration) through ~45% of pipewall (very poor weld!)

Important questions not yet clearly resolved

- Where did "pups" come from?
  - Are they Standard Grade Pipe?
    - Yield Strength?
    - Toughness?
    - Really DSAW??
  - Important records on the pipe missing?

Pipeline Emergency Response Plans & First Responders

- PHMSA Issued Advisory Bulletin ADB 10-08 Nov. 2010 on Pipeline Emergency Response Plans (ERPs)
  - At Least Three Objectives
    - Prompt
    - Effective
    - Coordinated Response
- Already in Pipeline Safety Regulations
  - Sets Minimum Written Requirements on Pipeline Operator
    - For gas - 49CFR192.615
    - For liquids - 49CFR 195.402(e)
    - Must be Shared with Emergency Responders!
- ERPs are Not Oil Spill Response Plans!
  - See this recurring disconnect in Washington State, and across the Country
  - Gas Pipeline ERPs are fairly simple
  - The Three Critical Pipeline Contact Phone #s

Pipeline Emergency Response Plans & First Responders

- Industry Reaction to ADB 10-08 at March Technical Advisory Committee Meetings "Puzzling"
  - Many Companies/Regulators Don't Get It!
  - ERPs not that complicated
  - Must include Local First Responder contacts

- ERPs Should be Different for Gas Pipelines
  - Also different for transmission vs distribution
  - Especially early stage communication
  - Usually Less than one page

- Drill with First Responders "Nice" But Not Necessary, if Critical Factors Addressed
  - i.e., Proper, timely communication
  - Identifies who really is in charge, <u>especially initially</u>!
  - <u>Other sensitive pipeline information must be supplied to First Responders</u>

Need for Certain Pipeline Information to be in Public Domain

Major Pipeline General Location Maps

From WUTC map web site http://www.utc.wa.gov/regulatedIndustries/transportation/pipeline/Pages/pipelineMaps.aspx

It's the law in Washington State (RCW 81.88.080)!

Feds also mandate certain additional pipeline info must be given to First Responders

Critical Pipeline Information

- Gas vs Liquid
- Interstate vs Intrastate Pipelines
  - WA pipeline regs for intrastate better than federal minimum pipeline safety regs
- Transmission vs Gas Distribution
  - Emergency Response Different
    - See PHMSA Advisory Bulletin ADB-10-08
- Other Critical Pipeline Information
  - Control Center/Gas Control contacts
  - MAOP/MOP
  - Pipe Diameter
  - Critical Valve Location/Actuation
  - General Pipe Material (steel, plastic, cast iron, etc.)
- No Surprise API 1162 Communication/ Notification Isn't Working!
  - See CCOPS 11/22/2002 letter to API
  - CCOPS might want to write a new letter to PHMSA on this issue

State PUCs & Pipeline Safety

- Is There Proper Focus on Pipeline Safety?
  - Too many state PUCs appear ineffective
  - How are conflicts between safety and costs addressed?
    - Overfocus on ratemaking at expense of safety?
    - Culture of safety deregulation
    - Enforcement actions in the public domain?
    - Just meeting federal minimum pipeline regs?

- State Pipeline Safety Agency Properly Funded?
  - # of Inspectors adequate, and properly allocated?
  - Certified by feds?
  - Impacted by furlough days?
  - Budget cutting or underfunding essentially deregulating?

- Enforcement Powers?
  - Fining?
  - Wrong inspection focus?
  - Self regulation - an oxymoron!

Washington State (WUTC)

- Regulatory oversight much improved after 1999 Bellingham tragedy and various gas pipeline failures within state

- State pipeline safety regulations for intrastate exceed federal minimum pipeline safety regs in many important areas
  - Major exception is Third Party Damage Prevention
- Interstate agent for PHMSA

- Citizens Committee on Pipeline Safety
  - Prudent structure established by legislation
  - Independent of WUTC by law
    - Use WUTC as a resource, when appropriate
  - What are your current task issues?

- WUTC Pipeline Safety Organization
  - High Technical Competence
  - Safety Agency Independently funded
    - Watch that state budget cuts, grabs for funding, or furlough impacts don't place this pipeline safety organization at risk
      - Pipeline safety is 24/7, 365 Days/yr
  - Respect that WUTC can place a lot of pipeline safety info in public domain, and some not in public domain

Pipeline Safety Issues

- Areas needing regulatory improvements
  - How can a pipeline operator apply risk management without proper pipeline records?
    - Are pipeline records adequate?
      - Hydrotesting mandated in certain cases
  - Strengths/weaknesses of assessment methods in IM management, especially Direct Assessment
  - The assumption of “stable” anomalies
  - More pipeline information must be made accessible
    - The issue of ERPs and First Responders
    - Improving informing the public about pipelines in the neighborhood
  - Mainline valve location and valve actuation (RCVs/ACVs) effectiveness
  - Construction inspections
  - IM assessments need to be made more public
  - Overpressure reporting/prevention must be improved
  - The effectiveness of a new program called DIMP (for gas distribution)?
  - PHMSA Reauthorization issues
  - PUC pipeline safety effectiveness
  - WUTC communication with cities/local governments
  - Effective public notification about pipelines

- A whole lot of pipeline safety issues remaining?
  - CCOPS is welcome to address a few